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EXAMINER	
PAPPAS, PETER	

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2628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,122	ROUET ET AL.	
	Examiner	Art Unit	
	PETER-ANTHONY PAPPAS	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *08 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 13-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 13-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter (Claim 17: "...computer readable medium for storing a computer program executable to process..."). See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 3-6 and 8-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5-12 of copending Application No. 11/569, 166, herein referred to as '166, in view of Flórez-

Valencia et al. (3D Graphical Models for Vascular-Stent Pose Simulation). Although the conflicting claims are not identical, they are not patentably distinct from each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 1 of Application 10/542, 122 teaches:	Claim 4 of Application 11/569, 166 teaches:
Claim 1: creating a deformable tubular mesh for fitting a 3D path comprising a set of unordered points defining a plurality of path segments, the mesh model having an initial radius and comprising a plurality of mesh segments corresponding to the plurality of path segments; automatically adapting a length of a mesh radius of each mesh segment based on a radius of local curvature of the corresponding path segments and the initial radius.	Claim 1: means for computing a treelike center path of the tubular treelike structure; means for dividing the treelike center path of the tubular treelike structure into segments formed of points; means for generating generic cylindrical meshes formed of cells, for individual segments of the treelike center path. Claim 4: wherein the means for generating generic cylinders comprise: generating means for creating a deformable tubular mesh model for fitting a 3D path segment composed of a set of ordered points and automatically adapting the mesh radius based on the curvature of the 3D path and

	sample distance of the path points and a predefined input radius.

However, ‘166 fails to explicitly teach: wherein said creation of a deformable tubular mesh model for fitting a 3D path is based on a centerline of a 3D tubular object of interest. Flórez-Valencia et al. teach creating a deformable tubular mesh model (e.g., cylindrical stent mesh model; “…The stent model is also a cylindrical mesh..." – § 1, ¶ 3) for fitting a 3D path (e.g., $A_p(l_p)$ – parametric 3D curve representing the centerline of a stent; § 2, ¶ 1) based on a centerline (e.g., $A_v(l_v)$ – parametric 3D curve representing the centerline of a vessel; § 2, ¶ 1) of a 3D tubular object (e.g., vessel) of interest (§ 2, ¶s 2-3; Fig. 2). It would have been obvious to one skilled in the art, at the time of the Applicant’s invention, to incorporate the teachings of Flórez-Valencia et al. into the system taught by ‘166, because through such incorporation it would provide a means of increasing modeling accuracy within said system as said mesh model would be able to follow the actual centerline of the object, which reflects the path and bends of said object, it is to model rather than requiring said system to perform complex calculations to determine the path and bends of said object through analysis of, for example, the respective surfaces of said object.

4. Claims 3-6 and 8-11 of the instant application is anticipated by claims 5-12, respectively, of application ‘166 in that claims 5-12 of application '166 contains all the limitations of claims 3-6 and 8-11, respectively, of the instant application. Claims 3-6, 8 and 9 of the instant application therefore are not patently distinct from claims 5-12,

respectively, of application '166 and as such is unpatentable under obvious-type double patenting.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter ("...computer readable medium for storing a computer program executable to process...") which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. While the specification discloses "A computer program product having pre-programmed instructions to carry out the method may also be implemented" (p. 14, ll. 22, 23) it is noted that said language is not considered sufficient to support the limitation "computer readable medium for storing a computer program executable to process."

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 11 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "substantially" (ll. 3 and 2, respectively) is a relative term which renders the claim indefinite as it is not evident at what point an

object is considered “substantially” tubular. Said term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For the purposes of applying prior art it is noted: the language “having substantially tubular parts” (claim 11) is considered to read “having tubular parts”; the language “a substantially tubular object” (claim 14) is considered to read “a tubular object.”

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-3, 6,10, 11, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flórez-Valencia et al. (3D Graphical Models for Vascular-Stent Pose Simulation) in view of Dumoulin et al. (Mechanical Behaviour Modelling of Balloon-Expandable Stents) in view of Hernández-Hoyos et al. (Computer-assisted Analysis of Three-Dimensional MR Angiograms) in view of Montagnat et al. (A Hybrid Framework for Surface Registration and Deformable Models) and further in view of Yim et al. (Vessel Surface Reconstruction With a Tubular Deformable Model).

11. In regard to claim 1 Flórez-Valencia et al. teach: creating a deformable tubular mesh model (e.g., cylindrical stent mesh model; “…The stent model is also a cylindrical mesh..." – § 1, ¶ 3) for fitting a 3D path (e.g., $A_p(l_p)$ – parametric 3D curve representing

the centerline of a stent; § 2, ¶ 1) based on a centerline (e.g., $A_v(l_v)$ – parametric 3D curve representing the centerline of a vessel; § 2, ¶ 1) of a 3D tubular object (e.g., vessel) of interest (§ 2, ¶s 2-3; Fig. 2), the 3D path comprising a set of ordered points (e.g., vertices) defining a plurality of path segments ("...The discretized version of each centerline $A(l)$ is a set of vertices $\{a_i\}$..." – § 2, ¶ 1; "The surface is bound to the centerline: each surface vertex v_j is associated with the 3 closest centerline vertices $\{a_{i-1}, a_i, a_{i+1}\}$..." – § 3.2, ¶ 2; Fig. 5). It is noted that a portion of a centerline located between two respective centerline vertices is considered to read on a segment of a centerline (e.g., Fig. 5 is considered to illustrate at least two centerline segments).

Flórez-Valencia et al. teach the mesh model having an initial radius ("Fitting the stent to the vessel axial shape can then be seen as a process of sliding the predefined shape $C_p(l_p)$ along the centerline $A_v(l_v)$ ... mapping the axis $A_p(l_p)$ of the initial straight model of the stent onto the vessel centerline..." – § 2, ¶ 2). It is noted that a radius of said initial straight model of said stent is considered to read on an initial radius.

Flórez-Valencia et al. teach: the mesh model comprising a plurality of mesh segments corresponding to the plurality of path segments ("...Let $A_p(l_p)$ and $A_v(l_v)$ be parametric 3D curves representing the centerlines of the stent and of the vessel respectively ... The discretized version of each centerline $A(l)$ is a set of vertices $\{a_i\}$..." – § 2, ¶ 1); automatically adapting a length of a mesh radius of each mesh segment based on the corresponding path segment and the initial radius ("...Maracas accurately extracts centerline points $\{a_i\}$ and roughly estimates a set of radii $\{r_i\}$. This provides an initialization of the simplex-mesh model close to the vessel boundary and, together with

the axial constraint, can be successfully used for 3D segmentation of the vessel…" – § 3.3, ¶ 1; "…The stent model is placed between l_{v0} and an end point at l_{vM}, with l_{v0} a user-defined delivery point and l_{vM} an end point automatically deduced (for a given radius) from the length/radius relation that characterizes the stent-expansion process [5]." – § 2, ¶ 2).

It is noted that method taught by Flórez-Valencia et al. is reliant upon teachings disclosed in papers [5: Dumoulin et al. – pp. 1463-1465, § 3.1], [7: Hernández-Hoyos et al. – p. 425, col. 1, ¶ 3; p. 425, col. 2, ¶ 3; pp. 427, 428, § How Does it Work; p. 434, § Conclusions; Figs. 7-9], [8: Montagnat et al. – pp. 1043, 1044, § 3.1; pp. 1044-1046, § 5] and [16: Yim et al. – p. 1414, col. 1, ¶ 2; p. 1416, col. 1, ¶ 3; p. 1417, col. 1, ¶ 2; p. 1419, col. 2, ¶ 3; Fig. 4] which are directly referenced by Flórez-Valencia et al. (p. 2, ¶s 2, 3, 4; p. 3, ¶ 5). Specifically, Yim et al. teach automatically adapting a length of a mesh radius of each mesh segment based on a radius of local curvature of the corresponding path segment ("A second feature of the tubular coordinate system, as mentioned in the previous section, is that the radii do not emanate in straight lines from the axis at all points. Rather, the radial lines are warped in areas where the vessel axis is curved. This warping prevents radial lines from adjacent axial locations from intersecting one another." – p. 1414, col. 1, ¶ 2; p. 1417, col. 1, ¶ 2; Fig. 4).

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the respective teachings of said papers (e.g., [5], [7], [8] and [16]) into the method taught by Flórez-Valencia et al., because Flórez-Valencia et al. explicitly states the use of said teachings to implement the method taught by Flórez-

Valencia et al. and thus through such incorporation it would provide a means of rendering said method operable.

12. In regard to claim 2 Flórez-Valencia et al. teach creating a tubular structure for fitting the 3D path ("...The stent model is also a cylindrical mesh..." – § 1, ¶ 3) and mapping the tubular structure onto a 3D surface of the tubular object of interest (mapping the axis $A_p(l_p)$ of the initial straight model of the stent onto the vessel centerline..." – § 2, ¶ 2; § 3.4, ¶ 1). However, Flórez-Valencia et al. fails to explicitly teach wherein the object of interest is represented in a gray level 3D image. It is implicitly taught by Flórez-Valencia et al. that color, at least to some degree, is utilized because both a given object of interest and a mesh are made visually apparent and are not invisible (Figs. 3, 4).

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to color the object of interest in gray because Applicant has not disclosed that coloring the object of interest in gray provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the color used by Flórez-Valencia et al. or the claimed gray coloring because both colors perform the same function of visually identifying for a given user a given region for further processing. Therefore, it would have been an obvious matter of design choice to modify Flórez-Valencia et al. to obtain the invention as specified in claim 2.

13. In regard to claim 3 Flórez-Valencia et al. teach computing the 3D path that corresponds to the centerline of the tubular object of interest and defining the path segments on the 3D path ("...Let $A_p(l_p)$ and $A_v(l_v)$ be parametric 3D curves representing the centerlines of the stent and of the vessel respectively ... The discretized version of each centerline $A(l)$ is a set of vertices $\{a_i\}$..." – § 2, ¶ 1; "The surface is bound to the centerline: each surface vertex v_j is associated with the 3 closest centerline vertices $\{a_{i-1}, a_i, a_{i+1}\}$..." – § 3.2, ¶ 2; Fig. 5). It is noted that a portion of a centerline located between two respective centerline vertices is considered to read on a segment of a centerline (e.g., Fig. 5 is considered to illustrate at least two centerline segments).

Flórez-Valencia et al. teach: creating an initial straight deformable cylindrical mesh model, of any kind of mesh, having a length along a longitudinal axis equal to a length of the 3D path (e.g., a length of said stent; "The initial model of the stent is constructed by placing predefined-shape contours $C_p(l_p)$, cirular or polygonal, equally spaced along a straight axis..." – § 2, ¶ 2; Fig. 3); dividing the initial mesh model into segments of length corresponding to the path segments of the 3D path ("...Let $A_p(l_p)$ and $A_v(l_v)$ be parametric 3D curves representing the centerlines of the stent and of the vessel respectively ... The discretized version of each centerline $A(l)$ is a set of vertices {ai}..." – § 2, ¶ 1; Figs. 3, 4); computing, for each mesh segment of the initial mesh model, a rigid-body transformation ("...one expects cylindrical structures with a high bending capability but for which deformations should preserve the generalized cylinder shape..." – § 3.2, ¶ 1) that transforms an initial direction of the mesh segment into a direction of the corresponding path segment of the 3D path, and applying the

transformation to corresponding vertices of the mesh segment (§ 2, ¶ 2; § 3.2; § 3.4, ¶ 1; Figs. 3, 4).

14. In regard to claim 6 the rationale and motivation disclosed in the rejection of claim 1 is incorporated herein, specifically: Yim et al. – p. 1414, col. 1, ¶ 2; p. 1417, col. 1, ¶ 2; Fig. 4.

15. In regard to claim 10 it is noted that said claim invokes 35 U.S.C. 112 sixth paragraph. The rationale disclosed in the rejection of claim 1 is incorporated herein. Flórez-Valencia et al. teach a means for acquiring 3D medical image data of said 3D object of interest ("...The vascular lumen 3D image is first acquired using contrast-enhanced magnetic resonance angiography (MRA) technique [4]..." – § 1, ¶ 4). It is implicitly taught that said method, including said acquisition means, is implemented via a computer system, wherein said system includes a processor (e.g., circuit means) for executing respective computer instructions to perform said method as said method is directed toward the processing of 3D graphical models from 3D image data acquired via contrast-enhanced magnetic resonance angiography.

16. In regard to claim 11 Flórez-Valencia et al. teach "...The stent model is also a cylindrical mesh. Merging both meshes simulates artery stenting..." (§ 1; Fig. 1). It is noted that an artery is considered to read on an organ. The rationale disclosed in the rejection of claim 10 is incorporated herein.

17. In regard to claim 13 Flórez-Valencia et al. teach wherein the deformable tubular model is created with 2-simplex meshes ("...In 2-simplex meshes used to represent

surfaces, each vertex has exactly three neighbors. 2-simplex meshes are topologically dual to triangulations, thus making conversions back and forth easy..." – § 3).

18. In regard to claim 17 the rationale disclosed in the rejection of claim 10 is incorporated herein. It is implicitly taught that said system comprises a computer readable medium for storing said instructions as said method would be unable to be executed without instructions controlling said processor and for said instruction to exist they must be stored in some form of memory.

19. Claims 4, 5, 7-9, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flórez-Valencia et al. (3D Graphical Models for Vascular-Stent Pose Simulation), Dumoulin et al. (Mechanical Behaviour Modelling of Balloon-Expandable Stents), Hernández-Hoyos et al. (Computer-assisted Analysis of Three-Dimensional MR Angiograms), Montagnat et al. (A Hybrid Framework for Surface Registration and Deformable Models) and Yim et al. (Vessel Surface Reconstruction With a Tubular Deformable Model), as applied to claims 1-3, 6,10, 11, 13 and 17, in view of Williams et al. (Rational Discrete Generalized Cylinders and their Application to Shape Recovery in Medical Images).

20. In regard to claim 4 Flórez-Valencia et al. fail to teach blending (e.g., linearly interpolating) the rigid-body transformations of consecutive mesh segments. Williams et al. teach the use of interpolation between two consecutive segments (e.g., cross sections) in a rational discrete generalized cylinder (pp. 389, 390, § 4; p. 390, § 5.1, p. 391, § 6; Fig. 4). It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the teachings of Williams et al. into the method

taught by Flórez-Valencia et al., because through such incorporation it would provide a means of minimizing distortion (e.g., twist) of said cylinder thus resulting in a more continuous model.

21. In regard to claim 5 Flórez-Valencia et al. fail to teach wherein a linear interpolation is used between rotations of consecutive mesh segments (e.g., family of rotations) for blending the 3D rigid body transformation to limit self-intersection between bent (e.g., twisted) portions of the deformable tubular mesh model. Williams et al. teach wherein a linear interpolation is used between a family of rotations to limit self-intersection between twisted portions of the deformable tubular mesh model (pp. 390, 391, § 5.2; p. 391, § 6; Fig. 4). The rationale and motivation disclosed in the rejection of claim 4 is incorporated herein.

22. In regard to claim 7 Flórez-Valencia et al. implicitly teach wherein said method involves approximation, specifically approximation of local curvature, as said method is directed towards a simulation and a simulation is not considered able to flawlessly mirror reality (e.g., a simulation, no matter how good, can only account for so much). However, Flórez-Valencia et al. fail to teach applying a radius modulation technique via linear blending (linear interpolation) from one radius (segment) to another. Williams et al. teach the use of interpolation between two consecutive segments (e.g., cross sections) in a rational discrete generalized cylinder (pp. 389, 390, § 4; p. 390, § 5.1, p. 391, § 6; Fig. 4). It is noted that each section of said cylinder defined by a respective radius is considered to read on a segment. The motivation disclosed in the rejection of claim 4 is incorporated herein.

23. In regard to claim 8 Flórez-Valencia et al. teach that "...one expects cylindrical structures with a high bending capability but for which deformations should preserve the generalized cylinder shape..." (§ 3.2, ¶ 1). However, Flórez-Valencia et al. fail to explicitly teach computing a minimal 3D rotation from an initial mesh direction to a target segment. Williams et al. teach computing the minimal 3D rotation from the initial mesh direction to a target segment (pp. 389-390, § 4; p. 390, § 5.1, 5.2, p. 391, § 6; Fig. 4). It is noted that computing the minimal 3D rotation from an initial mesh direction to a target segment is considered to read on minimizing mesh torsion. The motivation disclosed in the rejection of claim 4 is incorporated herein.

24. In regard to claim 9 Flórez-Valencia et al. fail to explicitly teach: defining rotations between segments using an axis parameter and a rotation angle parameter; computing the parameters iteratively between adjacent segments so that a new rotation for a current segment comprises a composition of a found rotation for a previous segment and the minimal rotation from the previous segment to the current segment. The rationale and motivation disclosed in the rejection of claim 8 is incorporated herein, specifically: Williams et al. – pp. 389, 390, § 4; p. 390, § 5.1, 5.2, p. 391, § 6; Fig. 4. It is noted that the iterative processing of a family of rotations, as disclosed by Williams et al., implicitly teaches that a rotation performed after a previous rotation in said family of rotations will be, at least to some degree, dependent upon the previous rotation.

25. In regard to claim 14 the rationale disclosed in the rejections of claims 1 and 3-5 are incorporated herein.

26. In regard to claim 15 the rationale disclosed in the rejection of claim 7 is incorporated herein.

27. In regard to claim 16 the rationale disclosed in the rejection of claim 6 is incorporated herein. It is noted that a diameter for said model is consider equal to two times the respective radius and that a change in the radius is considered to result in a change, at least to some degree, in the diameter.

Response to Arguments

28. The prior 35 U.S.C. 112 second paragraph rejection of claim 2 has been withdrawn in light of the removal of the language “substantially.”

29. In response to Applicant’s remarks that to the extent the nonstatutory obviousness-type double patenting provisional rejection may ultimately remain the only rejection in the present application "the Examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer" it is noted that the instant application is not in conditions for allowance. Applicant is directed to the respective above double patenting rejection.

30. In response to Applicant’s remarks that the disclosure of a computer program product and a general purpose computer being fed imaging data for the purpose of performing the described imaging processing is sufficient for one of ordinary skill in the art to recognize that Applicants invented what is claimed it is noted that the respective claim fails to disclose a general purpose computer tied to a computer program product. The Applicant is directed to the respective above 35 U.S.C. 112 first paragraph rejection.

31. In response to Applicant's remarks in regard to the 35 U.S.C. 112 second paragraph rejection of claims 11 and 14, specifically that "One of ordinary skill in the art, particularly in light of the application disclosure ... would construe this claim language to mean that the 'parts' and the 'object' are generally tubular in shape, but may not be precisely or entirely tubular, for example," it is noted that said statement only further serves to renders the claim indefinite. For example, at what point does an object read on being tubular? Does any amount of curvature of an object's surface or a particular degree of curvature of an object's surface render said object tubular?

32. In response to Applicant's remarks in regard to the rejection of claims 1-11 and 13-16 under prior art the Applicant is directed to the respective above rejections which have been clarified to address the respective claim amendments filed on 9/8/08.

33. Applicant's remarks have been fully considered but they are not persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER-ANTHONY PAPPAS whose telephone number is 571-272-7646. The examiner can normally be reached on M-F 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter-Anthony Pappas/
Primary Examiner, Art Unit 2628